

Appl. No. 09/135,180
Amdt. Dated May 24, 2004
Reply to Office Action of March 11, 2004

Attorney Docket No. 5586D-6845 (81784.0179)
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A solid-state image pickup device for generating image signals in accordance with incident light, comprising:
 - a semiconductor substrate having one conductive type;
 - a semiconductor region formed on one surface of said semiconductor substrate and having a conductive type opposite to said semiconductor substrate;
 - a plurality of channel regions extending in a column direction respectively in said semiconductor region;
 - a plurality of picture elements in which electric charges are accumulated defined in each portion of said plurality of channel regions; and
 - a plurality of transfer electrodes, extending in a row direction on said semiconductor region, for transferring the electric charges accumulated in said plurality of channel regions, said plurality of transfer electrodes being allocated to each picture element,
 - said plurality of picture elements including:
 - light receiving elements in which the electric charges are accumulated in accordance with the incident light, and storage elements in which the electric charges transferred from said light receiving elements are stored,
 - said plurality of light receiving elements including:
 - a first set of a plurality of light receiving elements in which at least one of the corresponding transfer electrodes is activated and simultaneously at least

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one of the transfer electrodes is inactivated in first and second image pickup operations; and

a second set of a plurality of light receiving elements in which all of the corresponding transfer electrodes are inactivated in the first image pickup operation, and at least one of the transfer electrodes is activated and simultaneously at least one of the transfer electrodes is inactivated in the second image pickup operation; and

wherein the electric charges generated in the second set of light receiving elements are directly discharged from the second set of light receiving elements to the semiconductor substrate in the first image pickup operation;

wherein a thinned-out image signal can be obtained before performing frame transfer to the storage section in the first image pickup operation; and

wherein charges of the second set of light receiving elements are discarded by controlling voltages to transfer electrodes in the first image pickup operation.

2. (Original): The solid-state image pickup device according to claim 1 wherein said first set of light receiving elements and said second set of light receiving elements are arranged in a matrix form in a predetermined region on the basis of a predetermined arrangement rule.

3. (Original): The solid-state image pickup device according to claim 2 wherein said first set of light receiving elements and said second set of light receiving elements are aligned in a row direction, and said first set of the plurality of light receiving elements and said second set of the plurality of light receiving elements are alternately arranged in a column direction.

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4. (Original): The solid-state image pickup device according to claim 1 wherein a channel region under the transfer electrode corresponding to said first light receiving element and a channel region under the transfer electrode corresponding to said second light receiving element differ in their concentration of impurities.

5-20. (Cancelled).